

New Federal Regulation for Automobile Refinish Coatings

As of January 11, 1999, the U.S. Environmental Protection Agency requires that all coatings manufactured in or imported into the United States for auto body refinishing meet specific limits on volatile organic compound (VOC) content. VOCs contribute significantly to the formation of ground-level ozone, which is part of smog. Breathing ozone can damage lungs, aggravate asthma, and cause serious respiratory illness. Ozone can also cause damage to forests and crops.

The annual drop in VOC emissions into the air resulting from the new limits is estimated to be 31,900 tons, or a 33% reduction from 1995 levels. As part of the effort to reduce nationwide VOC emissions, other commercial and consumer products (including metal cleaning solvents, personal care products, architectural coatings, and household cleaning products) will also be regulated for VOC content.

The new regulation for auto refinish coatings was developed by the U.S. EPA with input from coating manufacturers and trade associations including the Automotive Service Association, National Automobile Dealers Association, and the National Paint and Coatings Association.

Q. Who is affected by the new regulation?

A. The new regulation affects all auto body shops in the United States that are not already using low VOC coatings. All coatings manufactured after January 11, 1999 will have to meet the new VOC limits.

Massachusetts and Rhode Island auto body shops are not affected by the federal regulations because state coating standards are

essentially equivalent to the new federal limits. These states also require some recordkeeping and the use of HVLP spray guns. For certain coatings, New York has more stringent limits than the federal requirements. (Please contact MA Department of Environmental Protection, RI Department of Environmental Management, or NY Department of Environmental Conservation for additional information. See inside back cover for telephone numbers.)

Q. What are the new federal VOC limits?

A. The new maximum allowable VOC limits for auto refinish coatings are:

Coating Category	VOC Content L b s / G a l
Pretreatment Wash Primer	6.5
Primer/Primer Surfacer	4.8
Primer Sealer	4.6
Single / 2-Stage Topcoat	5.0
Topcoats of 3 or More Stages	5.2
Multi-Colored Topcoat	5.7
Specialty Coatings	7.0

These limits are for coatings "as applied" (after mixing with reducers and hardeners).

Q. Do the new coatings require different mixing and application techniques?

A. Since some states have required the lower VOC coatings for a number of years, initial problems with mixing and application have been resolved. The new coatings are durable, look great, and improve customer satisfaction.

Spray technicians may, however, need training on proper mixing and application techniques. Proper painting technique helps reduce coating use, overspray, and other problems that affect transfer efficiency, air quality, and paint

job quality. Reducing overspray also lowers the cost of the coating per vehicle.

Here are some useful tips for making the transition to the lower VOC coatings.

Mixing

- Closely follow the mixing instructions on the coating cans. The instructions specify the quantities of coating, reducer, and hardener required to meet the “as applied” standards.
- Do not create your own mixtures. “Cocktailing” may result in inferior finishes that exceed the VOC standards.
- Consider using a coating mixing system to mix only the amount of coating that you need.

Note: When conducting routine inspections, EPA and/or state inspectors may ask technicians to mix a coating according to the paint manufacturer’s instructions. The mixed coating may then be tested for compliance with VOC limits.

Application

- Use either high-volume, low-pressure (HVLP) or low-volume, low-pressure (LVLP) spray guns for the best results. Ask your coating supplier or equipment distributor for more details.
- Always hold the spray gun perpendicular to the surface being sprayed, using parallel strokes.
- Reduce overspray during the coating process by maintaining a 50% overlap, a constant gun speed, and a constant distance from the surface being coated.
- Feather trigger at the beginning and end of each pass.
- Plan and sequence jobs to take into account increased drying time for some of the new coatings.

Q. How will the switch to lower VOC coatings affect costs?

A. Although the new lower VOC coatings are more expensive to buy than the older coatings, they provide better coverage - especially when applied using HVLP or LVLP spray guns. This improvement can translate into significant overall savings. For example, take the following case of an auto body shop in Colorado with five employees.

Representative Cost Savings from Using Low VOC Coatings (1995 estimates)

Old System	New System
Conventional Solvent-Based Coatings	High-Solids, Solvent-Borne Coatings (Low VOC)
HVLP spray guns with gravity Feed paint cups	HVLP spray guns with gravity Feed paint cups
Coating Content	
Solids: 20-30%	Solids: 50-70%
VOC: 3.5-6.0 lbs/gal	VOC: 2.3-3.5 lbs/gal
Coating/Thinner Ratio: 1:1	Coating/Thinner Ratio: ~ 10:1
Equipment Purchase Costs	
None (already using HVLP guns)	
Paint Purchase	
39 gal/month @ \$116/gal	21 gal/month @ \$140/gal
Monthly Cost: \$4,500	Monthly Cost: \$3,000
	Annual Savings: \$18,000
Waste Disposal Costs	
8 containers @ 16 gal of solvent waste cost: \$616	4 containers @ 16 gal of solvent waste Cost: \$308
	Annual Savings: \$308
Other Costs	
Unestimated costs due to using more thinner	Unestimated savings due to using less thinner
	Total Annual Savings: \$18,308

Note: Savings may differ by shop location, size of operation, and mix of repair jobs.

“By using HVLP spray guns, we virtually eliminated overspray and reduced the amount of paint we use by 30%. This is critical due to the rising costs of coatings.”
-Dick Hoyt, Benson’s Auto Body, Franklin, NH

Tips for Coating Purchase and Use

Primers

- Use a wash primer, epoxy or metal conditioner conversion coating system.

Primer Surfaces

- Minimize the use of surface primer. This can reduce VOC emissions, limit material costs, and achieve a better quality finish.
- If you do use a primer surfacer, use a properly operating primer gun (and a urethane product).

Primer Sealers

- Use low VOC-urethane primer sealers whenever possible.
- Choose a tintable primer-sealer or a color that can be easily covered by the topcoat. This reduces the amount of coating needed to complete the paint job.

Topcoats

- Mix colors in-house, making sure to use the formula for the proper shade of the specific color.
- When available, use waterborne basecoats and limit the addition of paint additives.
- Use high solids/low VOC clearcoats.

"Waterborne coatings have performed so well for us that we're able to use them for two-thirds of our refinishing operations - even in winter. They are extremely user friendly and provide great color matching and metallic distribution. And the benefits, like reduced volume of product needed and improved air quality, have all been definitely worth the investment."

-Ernie Nickole, Owner, Nickole Auto Body, Saugus, MA

Note: Waterborne coatings are beyond what is required by law.

Q. Where can I get more information?

A. Each state offers free technical and compliance assistance for preventing pollution and meeting waste management requirements. Contact U.S. EPA to find out about where you may obtain the low VOC coatings.

Federal Resources

U.S. EPA Region I New England
Environmental Assistance Team800-90-NEAT

State Resources

Connecticut Department of Environmental Protection
Small Business Assistance Program 860-424-3382
Office of Pollution Prevention 860-424-3297
Hazardous Waste Compliance Assistance 888-424-4193

Maine Department of Environmental Protection
Office of Pollution Prevention 207-287-7881
Small Business Technical Assistance Program 800-789-9802

Massachusetts Department of Environmental Protection
Information Center (within 617 area) 617-338-2255
Information Center 800-462-0444

Massachusetts Executive Office of Environmental Affairs
Office of Technical Assistance 617-727-3260

New Hampshire Department of Environmental Services
Small Business Technical Assistance Program 800-837-0656
Pollution Prevention Program 800-273-9469

New York State Department of Environmental Conservation
Pollution Prevention Hotline 800-462-6553
Environmental Facilities Corp.,
Small Business Assistance Program 800-780-7227
Empire State Development 800-STATE-NY

Rhode Island Department of Environmental Management
Pollution Prevention Program
Office of Technical and Customer Assistance 401-222-4700

Vermont Department of Environmental Conservation
Small Business Compliance Assistance 800-974-9559

(and for assistance on pollution prevention)

Prepared by

Northeast Waste Management Officials' Association

in cooperation with:

Connecticut Department of Environmental Protection

Maine Department of Environmental Protection

Massachusetts Department of Environmental Protection

New Hampshire Department of Environmental Services

New York State Department of Environmental Conservation

Rhode Island Department of Environmental Management

Vermont Department of Environmental Conservation

Funded by

U.S. Environmental Protection Agency,

Region I-New England



Printed on recycled paper with soy-based inks.